

IN THE CLAIMS

This is a complete and current listing of the claims, marked with status identifiers in parentheses. The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A redundant cooling device for an electric submarine drive motor ~~(1)~~, comprising:
with a first cooling circuit (2) and a second cooling circuit (3), by means of which adapted to transport thermal energy can be transported away from the electric submarine drive motor (1), characterized in that wherein the coolant of the first cooling circuit (2) and the coolant of the second cooling circuit (3) are adapted to flow in counter-current through a stator cooling ring (4) of the electric submarine drive motor, (1) in the a region of the electric submarine drive motor.
2. (Currently Amended) The redundant cooling device as claimed in claim 1, ~~in which~~ wherein a main pump ~~(5)~~ and a minor pump ~~(6)~~ with considerably lower power in comparison with the main pump ~~(5)~~, are arranged in each cooling circuit ~~(2, 3)~~.
3. (Currently Amended) The redundant cooling device as claimed in claim 2, ~~in which~~ wherein the main pump ~~(5)~~ and the minor pump ~~(6)~~ of each cooling circuit ~~(2, 3)~~ have include supply voltages that are independent from each other.
4. (Currently Amended) The redundant cooling device as claimed in claim 2 ~~or 3~~, ~~in which~~ wherein each cooling circuit ~~(2, 3) can be is operated operatable~~ in a low speed range of the electric submarine drive motor, ~~(1)~~

exclusively by ~~means~~ use of the minor pump ~~(6)~~ assigned to ~~it~~ thereto.

5. (Currently Amended) The redundant cooling device as claimed in claim 4, ~~in which~~ wherein each cooling circuit ~~(2, 3) can be~~ operated operatable above ~~the~~ a low speed range of the electric submarine drive motor ~~(1)~~, by use ~~means~~ of the main pump ~~(5)~~ assigned to ~~it~~ thereto.
6. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 5~~, wherein a coupling valve is respectively arranged in transfer lines provided between the two redundant cooling circuits (2, 3) of which transfer lines (10, 11) in which a coupling valve (12, 13) is respectively arranged are provided.
7. (Currently Amended) The redundant cooling device as claimed in claim 6, ~~in which~~ wherein the coolant circulation of the two cooling circuits ~~(2, 3) connected to each other when the coupling valves (12, 13) are open can be~~ is accomplished by ~~means~~ use of one of the two main pumps ~~(5)~~, the output power of the electric submarine drive motor ~~(1)~~ being adaptable to the amount of heat which ~~can~~ is then ~~be~~ removable.
8. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 7~~, wherein the redundant pump units, heat exchangers, fittings, and valves, etc. of which are arranged on the upper part of the electric submarine drive motor (1).
9. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 8~~, wherein the two cooling circuits (2, 3) of which each have a cooling branch (14), by means of which inverter modules (15) assigned to the submarine drive motor (1) can be cooled are coolable.

10. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 9, in which~~wherein the coolant in the two cooling circuits ~~(2, 3) can be~~is re-coolable by ~~use~~means of sea water in a water-water heat exchanger ~~(17) or water-air heat exchanger in each case.~~
11. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 10, in which~~wherein the main pump ~~(5) and the minor pump (6) of each cooling circuit (2, 3) is~~ assigned a power supplying and a switching unit ~~(9), the dedicated cooling plates of which can be~~are cooled by ~~means~~use of a further cooling branch ~~(18) of each cooling circuit (2, 3).~~
12. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 12, in which~~wherein the motors ~~(7) of the two minor pumps (6) of each cooling circuit (2, 3) are~~ operated with at least one of a fixed supply voltage and/or supply frequency.
13. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 12, in which~~wherein the main pumps ~~(5) of each cooling circuit (2, 3) are~~ supplied via inverters, in order to adapt the delivery rate of the cooling liquid, and with it the amount of heat to be removed, via the variable speed of the motors ~~(8).~~
14. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 13, in which~~wherein the motors ~~(8) of the two main pumps (5) are~~ formed as squirrel-cage three-phase asynchronous motors.
15. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 14, in which~~wherein an independent supply voltage is provided for each main pump ~~(5) and minor pump (6).~~

16. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 15, in which~~wherein each cooling circuit ~~(2, 3) has~~includes an expansion vessel ~~(21)~~ for the cooling liquid.
17. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 16, in which~~wherein each cooling circuit ~~(2, 3) has~~ a degassing device ~~(27)~~ and a service connection ~~(22)~~ for the cooling liquid.
18. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 17, in which~~wherein each cooling circuit ~~(2, 3) has~~ a pressure-relief valve.
19. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 18, in which~~wherein a temperature sensor ~~(23)~~ is arranged in each of the two cooling circuits ~~(2, 3)~~.
20. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 11 to 19, in which~~wherein a pressure-independent flow governor ~~(20, 16, 19)~~ is respectively arranged in each of the two cooling circuits ~~(2, 3)~~ upstream of the stator cooling ring ~~(4)~~, upstream of the inverter modules ~~(15)~~ and upstream of the power supplying and switching unit ~~(9)~~.
21. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 20, in which~~wherein a temperature-controlled three-way valve ~~(25)~~ is present in each of the two cooling circuits ~~(2, 3)~~.
22. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 2 to 21, in which~~wherein a nonreturn valve is respectively present in a pressure side of the minor pumps ~~(6)~~ and the main pumps ~~(5)~~.

23. (Currently Amended) The redundant cooling device as claimed in ~~one of claims 1 to 22, in which~~wherein quick-action couplings ~~(26)~~ that shut off in both directions are arranged in the connecting elements between the redundant cooling device and the submarine drive motor ~~(1)~~.
24. (New) The redundant cooling device as claimed in claim 3, wherein each cooling circuit is operatable in a low speed range of the electric submarine drive motor, exclusively by use of the minor pump assigned thereto.
25. (New) The redundant cooling device as claimed in claim 24, wherein each cooling circuit is operatable above a low speed range of the electric submarine drive motor, by use of the main pump assigned thereto.